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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,979	12/20/2000	Kazuhiko Takaishi	3408.65028	8648

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EXAMINER

WONG, KIN C

ART UNIT PAPER NUMBER

2651

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/742,979

Applicant(s)

TAKAISHI, KAZUHIKO

Examiner

K. Wong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 29204.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

This is a response to amendment filed on 10/28/04 and a newly discovered prior art in responsive to the amendment.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims (1-2, 5, 6-7, 10, 11-12 and 15) are rejected under 35 U.S.C. 102(b) as being anticipated by Shinohara et al (5724204).

Regarding claim 6: Shinohara et al discloses a head positioning control device (as illustrated in figure 3) for a disk device (as depicted in element 14 of figure 3) for positioning a head to a predetermined position of a disk by driving an actuator (element 34 in figure 3), including:

a demodulation circuit (element 30 in figure 3) which demodulates a position signal of the disk read by the head (element 12 in figure 3); and

a control circuit (elements 16/20/18/22 in figure 3) which calculates a demodulation position according to the demodulation result and controls the actuator for driving the head by calculating control quantity according to the position errors between the demodulation position and the target position (in col. 8, lines 38-62; col. 1, lines 24-33 and col. 4, lines 32-67 where Shinohara et al describes the errors in the mis-demodulation of the position error control for the head position),

wherein the control circuit corrects the demodulation result including PosN and PosQ obtained by a four phase offset signal of the position signal with a dynamically-obtained correction value which depends on an actual moving speed of the head and calculates the demodulation position (in col. 6, line 34 to col. 7, line 5 where Shinohara describes the control correction that including the PosN and PosQ position signals); and

wherein the control circuit further detects the moving speed of the head based on the position signal read by the head (in col. 6, lines 55-63 where Shinohara describes the moving speed of the head while demodulating).

Regarding claim 7: Shinohara et al teaches that wherein the demodulation circuit demodulates a first position information and a second position information, which have different phases from each other, from the position signal; and the control circuit compares the first position information and the second position information, corrects the first position information with a first correction value, which depends on the moving speed of the head, according to the comparison result, and corrects the second position information with a second correction value, which depends on the moving speed of the head, according to the comparison result (in col. 6, line 45 to col. 30 and col. 8, lines 53-62 where Shinohara describes the correction for the position information).

Regarding claim 10: Shinohara et al teaches that wherein the demodulation circuit demodulates a position signal of a magnetic disk read by a magnetic head (see the background of Shinohara et al in col. 1, lines 11-19).

Regarding claims 1-2 and 5: method claims (1-2 and 5) are drawn to the method of using the corresponding apparatus as claimed in claims (6-7 and 10). Therefore

method claims (1-2 and 5) correspond to apparatus claims (6-7 and 10) and are rejected for the same reasons of anticipation as used above.

Regarding claims (11-12 and 15): claims (11-12 and 15) have limitations similar to those treated in above rejections, and are met by the reference as discussed above. Claim 11 however also positively recited the disk drive that has met by element 14 in figure 3 of Shinohara et al.

Claims (1-15) are rejected under 35 U.S.C. 102(b) as being anticipated by Takaishi et al (5731973).

Regarding claim 6: Takaishi et al discloses a head positioning control device (as depicted in figure 5 of Takaishi et al) for a disk device (as depicted in figure 2 of Takaishi et al) for positioning a head (element 22 in figure 5) to a predetermined position of a disk (element 14 in figure 5) by driving an actuator (element 19 in figure 5), including:

- a demodulation circuit (element 24 in figure 5) which demodulates a position signal of the disk read by the head; and

- a control circuit (element 26 in figure 5) which calculates a demodulation position according to the demodulation result and controls the actuator for driving the head by calculating control quantity according to the position errors between the demodulation position and the target position (see col. 9, line 27 to col. 10, line 13 Takaishi et al);

- wherein the control circuit corrects the demodulation result including PosN and PosQ obtained by a four phase offset signal of the position signal (as illustrated in figure 4A of Takeshi et al) with a dynamically-obtained correction value which depends on an

actual moving speed of the head and calculates the demodulation position (see col. 9, line 30 to col. 10, line 4 of Takaishi et al).

Regarding claim 7: Takaishi et al teaches that wherein the demodulation circuit demodulates a first position information and a second position information, which have different phases from each other, from the position signal (see col. 14-26 of Takaishi et al); and the control circuit compares the first position information and the second position information, corrects the first position information with a first correction value, which depends on the moving speed of the head, according to the comparison result, and corrects the second position information with a second correction value, which depends on the moving speed of the head, according to the comparison result (in col. 9, line 27-52 of Takaishi et al).

Regarding claim 8: Takaishi et al teaches that wherein the demodulation circuit demodulates a track number (see col. 9, lines 14-16 of Takaishi et al) and offset information from the position signal; and the control circuit selects the track number as the demodulation position when the moving speed of the head is faster than a predetermined speed, and calculates a demodulation position by correcting the offset information with a correction value which depends on the moving speed of the head when the moving speed of the head is slower than a predetermined speed (in col. 9, line 30 to col. 10, line 4 of Takaishi et al).

Regarding claim 9: Takaishi et al teaches that wherein the demodulation circuit demodulates a track number and offset information from the position signal; and the control circuit corrects the offset information with a correction value where gain, which

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depends on the recording position of the offset information, is added to the moving speed of the head with the recording position of the track number as a reference are considered inherent because the track number and offset information (in col. 9, line 30 to col. 10, line 4 of Takaishi et al).

Regarding claim 10: Takaishi et al depicts in figure 5 that wherein the demodulation circuit demodulates a position signal of a magnetic disk read by a magnetic head.

Regarding claims 1-5: method claims (1-5) are drawn to the method of using the corresponding apparatus claimed in claims 6-10. Therefore method claims (1-5) correspond to apparatus claims (6-10) and are rejected for the same reasons of anticipation as used above.

Regarding claims 11-15: claims (11-15) have limitations similar to those treated in the above rejections, and are met by the references as discussed above. Claim 11 however also recites the following limitations of a disk drive that has met by figure 4 of Takaishi et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims (3-4, 8-9 and 13-14) are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara et al (5724204) in view of Serrano et al (6049438).

Regarding claims 3-4, 8-9 and 13-14: although Shinohara et al discloses the control circuit for control the head moving speed in respective to the demodulated offset position head information signal (in col. 6, line 36 to col. 7, line 5 of Shinohara et al), Shinohara et al is silent on the demodulating the track number as the demodulated position information. Serrano et al is relied upon for the teaching of the track number as the demodulated position information (see the abstract for details).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the positional information with an embedded track number in the positional information as taught by Serrano et al. the rational is as follows: one of ordinary skill in the art would have been motivated to provide more accurate integration detection as suggested in col. 3, line 66 to col. 4, line 15 of Serrano et al.

Response to Arguments

Applicant's arguments filed 10/28/04 have been fully considered but they are not fully persuasive. As arguendo, applicant's assertions failed to address Takaishi et al (5731973) in paper #12. Furthermore, Takaishi et al stills applicable to the newly amended claims. Thus, the rejections of paper #12 (in respective to Takaishi et al) still stand.

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection to the newly amended claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Wong whose telephone number is (571) 272-7566.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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· you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kw

11 Apr 05


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